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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MASATOSHI NAGANO

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EXAMINER

LEE, CHEUKFAN

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/396,244

Applicant(s)

NAGANO, MASATOSHI

Examiner

Cheukfan Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17,22 and 24 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-16,18-21,23,25-27,31-40 and 42-48 is/are rejected.
- 7) ☒ Claim(s) 28, 29, 30, and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Claims are pending. Claims 1, and are independent.
2. The indicated allowability of claims 1, 3, 5-16, 18-21, 23, 25-27, 31-40, and 42-48 is withdrawn in view of the newly discovered reference(s) to Shiota et al. (U.S. Patent No. 6,346,998). Rejections based on the newly cited reference(s) follow.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 5-16, 20, 21, 23, 25-27, 31-40, and 42-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavely et al. (U.S. Patent No. 5,969,372) in view of Shiota et al. (U.S. Patent No. 6,346,998). Stavely et al. was previously cited.

Regarding claims 1, 8 and 9, Stavely et al. discloses an image scanning apparatus comprising all limitations claim. A light source (400 in Fig. 4C), which is a white light source, emits visible light and invisible light (infrared light IR) onto a film (col. 6, lines 52-64, exemplary embodiment shown in Fig. 4C). Fig. 4C is the figure relied upon in this rejection, the characteristics of the white light source (400), including emission of both visible and infrared light, however, is explained in several sections other than the section for Fig. 4C (col. 6, lines 43-44, line 28, col. 5, lines 3-5, col. 8, lines 62-65). In each of several exemplary embodiments in which the film is scanned in

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reciprocal motion, the film is scanned twice (Scans A and B), once with IR light to provide an image of the surface defects such as dust or scratch) and once called normal scan with the direct white light to produce the image to be corrected using the data obtained from the IR scan (col. 4, lines 15-30, col. 2, lines 43-44, col. 5, lines 5-8). "The order of Scan A and Scan B is not import." This inherently means that the film is first scanned with IR and then scanned with direct white light for the image to be corrected using the data from the first scan.

Stavely et al. does not disclose performing prescanning and then main scanning the film. Stavely et al. discloses one scan after the infrared scan. However, Stavely et al. does not eliminate the possibility of any prescan.

Shiota et al. discloses a film scanner which performs a pre-scan at a low resolution for determining a reading condition for a fine scan and then performs the fine scan at a desired (higher) resolution in accordance with the reading condition (col. 4, lines 20-23). In the embodiment of Fig. 5, the pre-scan on the film (all frames) is carried out by feeding the film in one direction, and then the fine scan (at higher resolution) is carried out by feeding the film in the reverse direction (col. 8, lines 21-24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Stavely et al. with the pre-scan feature of Shiota al. such that a prescan at a low resolution is performed to determine reading condition in the fine scan, and the fine scan (at higher resolution) (normal scan of Stavely et al.) is performed in accordance with the determined reading condition to reproduce a higher quality image of the film.

Regarding claim 3, the main scan of Stavely et al. is performed after the IR scan). Based on the order of scan B and scan A (main scan or IR scan) and the discussion of Shiota et al. for claim 1 above that the fine scan is performed after the pre-scan, one of ordinary skill in the art would have realized that both pre-scan and fine scan are performed after the IR scan.

Regarding claims 5 and 6, the scanning with IR in Stavely et al. is to detect abnormality such as dust or scratches on the film (col. 4, line 22, Abstract).

Regarding claim 7, the image data obtained in the normal scan is corrected by image processing means using the data obtained during the IR scan (col. 4, lines 15-25).

Regarding claim 10, the method of Stavely et al. is performed in a computer-controlled environment (col. 5, lines 6-13, for example).

Regarding claims 11-14 and 16, the claimed invention is not patentably distinct from the obvious scanning apparatus of Stavely et al. in view of Shiota et al. discussed for claims 1, 8 and 9 above, since Shiota et al. teaches plural scans performed in opposite direction from each other (one another). A common linear image sensor (CCD) is used for all scans including the visible light scans and IR scan. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control of Stavely et al. in view of Shiota et al. such that the IR scan is performed with the film being transported in a first direction, the pre-scan or rough scan is performed with the film being transported in a second direction opposite to the first

direction, and the fine scan is performed with the film transported again in the first direction after the pre-scan, in order to reduce the overall scanning time.

Regarding claim 15, the claimed invention requires that the IR scan and the rough scan be performed in the same direction of the two opposite directions of the film transport. One of ordinary skill in the art would have realized that, in a case that time is not a critical factor, performing the IR scan first for detecting whether there is too much dust on the film or the film is scratched too much and at the same time returning the film to its original position where the film was before the IR scan, would allow the film to be returned and stopped at its original position after the fine scan, the original position being the position of the film before the IR scan. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control of Stavely et al. in view of Shiota et al. to control the IR scan in the motion in one direction of the reciprocal motion for making the rough scan or pre-scan as claimed.

Regarding claim 20, Stavely et al. also disclose employing two light emission sections or light sources, one (304) for emitting IR and the other (306) for emitting visible light (Fig. 3).

Claim 21 is rejected as being a method claim corresponding to the rejected apparatus claim 11.

Regarding claim 23, the apparatuses of Stavely et al. and Shiota et al. are in a computer controlled environment. Using the apparatus and steps of Stavely et al. in view of Shiota et al., it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to implement a computer readable program to allow easy handling of the control procedures or steps.

Regarding claims 25, 26, 31, 32, and 34, the apparatus of Stavely et al. in view of Shiota et al. discussed for claims 1, 8, 9, and 11-13 above performs three types of scans as discussed, an IR scan, a pre-scan, and a fine scan. The fine scan is performed at resolution higher than that of the pre-scan. The fine scan disclosed in Shiota et al. is performed at a high resolution for image data printing. Though neither Stavely et al. nor Shiota et al. compare the resolution of an IR scan with that of a fine scan, one of ordinary skill in the art would have realized the fact that the resolution of fine scan for printing is relatively higher than other resolutions of the image data for other purposes, including for image display. Since the IR scan in the Stavely et al. is for detecting defect or dust on the surface of the film, it would have been obvious to one of ordinary skill in the art at the time the invention was made to set the resolution of the IR scan lower than that of the fine scan to speed up the defect detection process.

Regarding claim 27, see discussions for claims 1, 8, 9, and 11-13 with regard to directions of scanning.

Regarding claim 33, the film discussed is a transparent original.

Regarding claim 35, the claim claims a storage medium storing a computer program comprising codes that correspond to the steps performed in claims 25 and 34. Based on the reasons given for claims 25 and 34, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a computer program as claimed for easy handling of the control procedures or steps.

Regarding claim 36, 37, 42, 43, 44, based on the discussions addressed for claims 25 and 34, one of ordinary skill in the art would have realized the fact that one corresponding feature of scanning at a certain resolution discussed for claims 25 and 34 is high speed scanning, which requires a shorter time duration than that required for the high resolution fine scan. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Stavely et al. in view of Shiota et al. such that the IR scan performed at lower resolution and high speed is performed within a short time duration to speed up the whole process of the apparatus.

Regarding claim 38, according to Stavely et al. (col. 5, lines 35-45), an output signal level of the line sensor (CCD 310) in the visible light scan (when an artifact is present) is lower than an output signal level in the visible light scan.

Regarding claims 39 and 40, also according Stavely et al. (col. 5, lines 35-45), the (background) intensity is made sufficient to saturate the photosensor array (CCD). This inherently means that higher light emission intensity is applied in the IR scan than the emission intensity in the visible scan as claimed in claim 39. The line sensor (CCD) has higher sensitivity in the IR range than that in the visible range (col. 5, lines 39-44).

Regarding method claims 45 and 46, see discussions for claims 36 and 37, respectively.

Regarding claims 47 and 48, the claims claim a storage medium storing a computer program comprising codes that correspond to the steps performed in claims 45 and 46. Based on the reasons given for claims 45 and 46, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to implement a computer program as claimed for easy handling of the control procedures or steps.

5. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stavely et al. (U.S. Patent No. 5,969,372) in view of Shiota et al. (U.S. Patent No. 6,346,998) as applied to claim 11 above, and further in view of Hiramatsu et al. (U.S. Patent No. 4,974,068).

Regarding claim 18, the apparatus of Stavely et al. in view of Shiota et al. is discussed for claim 11 above. Stavely et al. does not disclose a retractable light shielding means as claimed. However, Stavely et al. mentions that in prior art scanners for scanning color film, an IR filter is placed somewhere in the light path to block infrared light (col. 4, lines 50-55).

Hiramatsu et al. discloses a retractable filter (35f) (light shielding means) having visible light cut characteristic for cutting the visible light (Fig. 6, col. 4, lines 46-58).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a retractable filter instead of the elements (mirrors 412, 414) of Stavely et al. in view of Shiota et al. as taught by Hiramatsu et al. so that a single optical path from the single light source to the CCD linear sensor is formed to simplify the optical path.

Regarding claim 19, see discussion for claim 18. Further, the IR filter (35f) of Hiramatsu et al. is mounted on a filter holder of the filter exchange (4) on which other

filters R, G and B (35c-35e) are also mounted (Fig. 6, lines 46-58). The exchange (4) retracts one filter out of the optical path and positions another filter in the optical path. The exchange (4) reads on the claimed physical device.

6. Claims 28, 29, 30, and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 17, 22, and 24 are allowed.

8. The following is an examiner's statement of reasons for allowance:

Claims 17, 22, 24, 28, 29, 30, and 41 are/would be allowable over the prior art of record because the prior art does not teach the claimed selectable mode skipping feature in combination with other limitations claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (703) 305-4867. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
July 23, 2004



Cheukfan Lee